OPEN MEETING AGENDA ITEM E-01345A-15-0241

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ORIGINAL

From: jcsolar@aol.com
Sent: Thursday, January 07, 2016 3:54 PM
To: RBurns-Web
Subject: Solar Water Heating
Attachments: Considerations for a Solar Water Heating Program.docx

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AZ CORP COMMISSION
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Commissioner Burns,

I'm Jim Combs, a Solar Water Heating (SWH) contractor for 34 years and the president of Arizona Solar Water Heating Alliance (AZSWHA). We've met at your office a couple of times to discuss SWH issues particularly as they pertain to incentives through the REST program and sincerely did appreciate your time. Your position, if I may summarize, is that incentives or subsidies are to be avoided because they skew the free enterprise system or something to that effect.

Our position is that as business owners we agree with you except in some specific cases where a monopoly has an unfair advantage within the free enterprise system. That is the case with APS and how they manipulated the energy market in the 70's and 80's as both the sole electric and gas utility provider. As the gas provider they stopped running gas lines to new housing developments and even after they sold the gas utility to SW Gas they paid developers to make their neighborhoods all electric. The result is that they have an unheard of number of all electric homes in their territory (60%) compared to other states and even within AZ. Why would they do this? They make an extra $40 - $50 per month selling the electricity to homeowners to heat their water vs. homes with gas water heating. So they've made many millions of dollars from that manipulation off of homeowners that have no other choice for water heating. The homeowners can't get natural gas to their homes and propane is more expensive than electric for water heating. A fair choice that should be provided is SWH with an incentive to make it competitive.

We've talked to a Commissioner who indicated that he is willing to offer a change to the 2016 REST that increases the amount of incentive for SWH from .30/kWh saved to .50 per kWh saved without adding to the existing fund which has been largely unused in 2015 because it is simply too low to drive sales at this time. This would serve as a test to determine the amount of incentive needed to drive the SWH market without adding any new money. From our perspective it is taking a chance that if it does substantially drive the market the relatively small amount of money left could be used up in 4 -6 months. But it is a chance that we are willing to take. And to repeat, there would be no new money allocated to the fund; just a carry over from 2015 REST fund.

We would ask you to consider supporting this sort of test case. Yes, it is still a subsidy which I know you deplore, but by not offering an alternative to electric water heating in those APS monopolized all electric homes you are in essence giving a subsidy to APS and rewarding them for unethical behavior dating back to the 70's and 80's. We appreciate you giving this some serious consideration and will attach a supporting fact sheet. All the facts are referenced and are not just our opinion. Thanks again for your time.

Respectfully,
Jim Combs - Conservative Energy Systems, Inc.,Owner Since 1982
President - Arizona Solar Water Heating Alliance (AZSWHA)

Arizona Corporation Commission
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Considerations for a Solar Water Heating Program

- 60% of APS and SRP residential customers have electric water heaters vs. 11% in California and 15% in Colorado. Natural Gas is not available to them. That amounts to 1.2 million customers who have no choice but to pay for the much more expensive electric water heating (Source: US Energy Information Administration)
- A major reason for the above discrepancy is that APS was the Valley's gas supplier during a period of huge residential growth and put a moratorium on gas service to many areas. They benefit greatly from this captive customer group in that as much as 25% of many customers electric bill goes to heating water electrically. (Source: SRP Energy Efficiency Video)
- Solar Water Heating (SWH) can save as much as 90% of a homeowner's electric water heating costs. (Source: ASU FINAL REPORT: HOW MUCH ENERGY IS SAVED BY SOLAR DOMESTIC HOT WATER SYSTEMS? College of Engineering and Applied Sciences)
- "Monthly fuel costs vary, but usually range from $29 to $41 per month for electric water heaters" based on 1990's APS electric rates. (Source: APS Consumers Guide to Solar Water Heating)
- A quality SWH system is roughly equivalent to a 2kW Photo Voltaic Solar Electric system (based on converting a SWH system kWh saved to kW's) A SWH system cost per watt is slightly less than a PV system cost per watt but is substantially less when money is leveraged from the cost of replacing a leaking electric heater.*)And a standard SWH system's total cost is less the $1/4^{th}$ the cost of a standard PV system)
- Virtually all homeowners that have a leaking electric water heater can afford to replace it with a SWH system unlike PV which is only cost effective for the largest users of electric (those with large homes and pools). PV leasing companies won't even talk lease unless a person has an average monthly electric bill over $150. In effect the lower consumers of electric end up paying for the larger users through NEM.

- As APS advertising mentions in adds about the Gila Bend Solar Thermal installation, this type of solar stores energy even "after the sun goes down". This is also true to an even larger measure by residential SWH systems which has a beneficial effect on peak demand according to SRP research.
- $158M of REST funding has been spent on PV vs. $12M on SWH
- At the current rate of .30/kWh incentive for SWH only a little over 200 systems have been installed this year (2014) in APS territory indicating that it is not an effective rate.
- Based on average PV system sizing the carryover of unused kW's from winter months typically amounts to between $700 and $800 in net metering benefits to PV owners. Subtracting out the cost of electric during those months from Palo Verde leaves approximately $500 to $600 in a premium that APS/Non PV ratepayers contribute to PV owners per year. It is an incentive that amounts to as much as $12K over 20 years and it is what drives PV sales.
- Replacing an electric water heater with a SWH system has the effect of removing the equivalent amount of pollution as removing 1/3 of a car from the road. (Source: Environmental Protection Agency)
- The key to adoption of SWH as a replacement to electric water heating in order to take advantage of the clear cut and unrivaled objective benefits is promotion which APS has stonewalled for the past 30 years.

The Arizona Solar Water Heating Alliance has presented the above facts to the Governor's Office of Energy Policy, RUCO, APS and 3 of the 5 returning Corporation Commissioners and their advisors. A common theme is a response of disbelief of SWH's effectiveness in harnessing solar and being energy efficient. One Commissioner's advisor said if this is all true than I can't understand why SWH isn't being adopted by so many more people. The answer is that SWH needs massive promotion by the utilities but understandingly they are reluctant to decrease their profits which greatly exceed virtually all other electric utilities in the U.S. from heating water

electrically. It will take the leadership of the Corporation Commission to make that happen for the benefit of all Arizonans.

*Based on the average electric water heater replacement cost of $800.